

Maurizio MEI

***Lasius (Cautolasius) myrmidon* n. sp.: a new hypogaeic ant from Greece**
(Hymenoptera Formicidae)

Abstract - A new ant species in the genus *Lasius* (*Cautolasius*) is described from the greek island of Evia. It is the third species of *Cautolasius* in the West Palaearctic myrmecofauna, distinguished from all the other species in the subgenus by a combination of small size, very small eyes and a peculiar pattern of chaetotaxy.

Riassunto - *Lasius* (*Cautolasius*) *myrmidon* n. sp.: una nuova formica ipogea di Grecia. Viene descritta una nuova specie di *Lasius* (*Cautolasius*), terza del sottogenere nella regione Palearctica occidentale, sulla base di materiale proveniente dall'isola di Evia. La nuova specie può essere distinta da tutte le altre del sottogenere per le piccolissime dimensioni, l'accentuata microftalmia ed la peculiare chetotassi.

Key words: *Lasius*, *Cautolasius*, Greece, new species.

INTRODUCTION

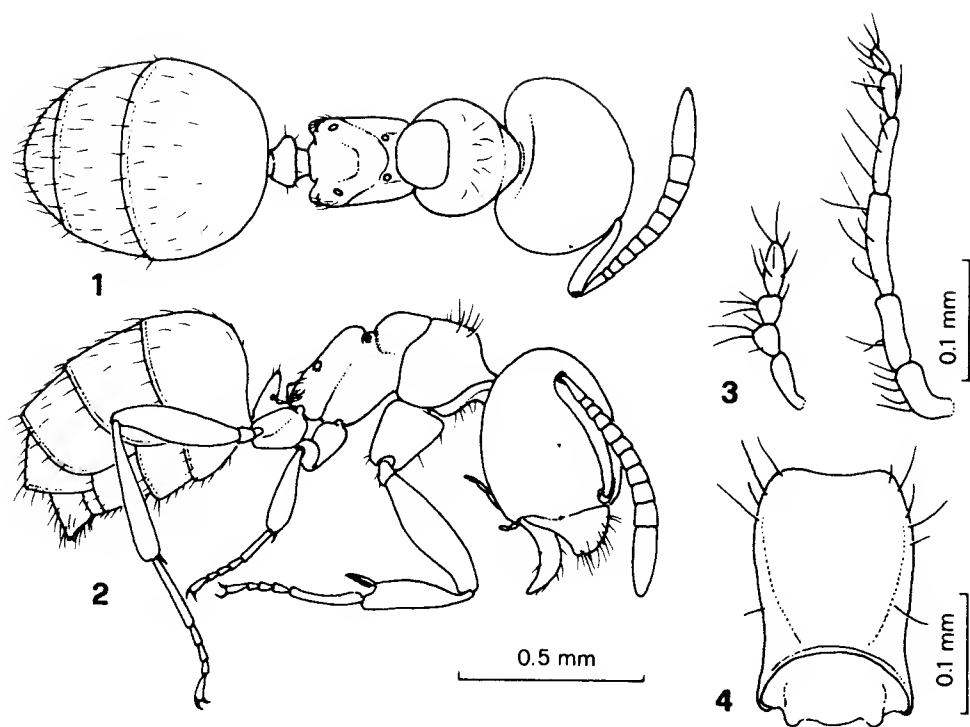
The formicine ant genus *Lasius* Fabricius, 1804 is among the most prominent elements of the Holoarctic myrmecofauna, both for the high number of species and for the abundance and the ecological importance of several of these.

The six species in the subgenus *Cautolasius* Wilson, 1955, with workers characterized by reduced eyes, shortened maxillary palps, large metapleural gland openings and depigmented yellow-coloured integument, have hypogaeic life habits (Wilson, 1955). Until now only two species belonging to this subgenus, *Lasius flavus* (Fabricius, 1781) and *Lasius myops* Forel, 1894, were known to occur in Europe and all around the Mediterranean Basin (Seifert, 1983; Agosti & Collingwood, 1987; Suñer et al., 1991).

A third species, from the greek island of Evia, is described and dealt with in this paper. The following standard measurements (mm) were taken with an ocular micrometer mounted on a Wild M8 stereo-microscope: HL (head length, excluding the mandibles), HW (maximum head width, excluding the eyes), SL (scape length), PW (maximum width of the pronotum in dorsal view). The number of ommatidia per eye (ON) was also recorded. The following indices were derived from the measurements: CI (cephalic index, HW/HL x 100), SI (scape index, SL/HW x 100).

***Lasius myrmidon* n. sp. (figs 1 - 11)**

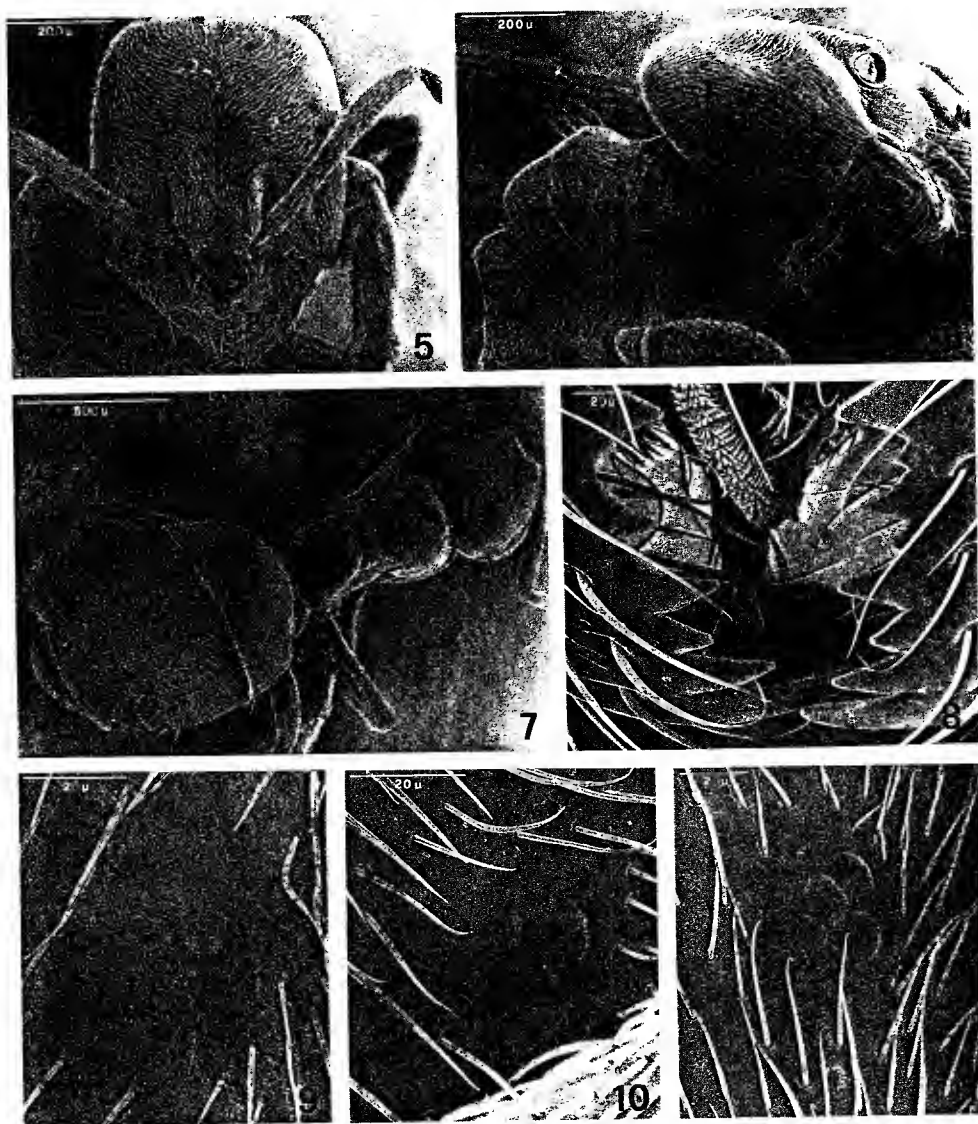
DIAGNOSIS. Worker. A very small (TL about 2 mm) *Lasius* (*Cautolasius*) distinguished from all other species in the subgenus by the following combination of characters: eyes extremely reduced to vestigial, with 0-9 ommatidia and faint to almost absent pigmentation; clypeus strongly convex; reduced dentition, apical margin with 6-8 teeth; distal maxillary palp segments very short, segment IV as long or longer than segment V-VI together; standing



Figs 1 - 4. *Lasius (Cautolasius) myrmidon* n. sp., paratype ♀ (Evia, Stira): 1 - dorsal view; 2 - lateral view; 3 - right labial and maxillary palp; 4 - posterior view of the petiole.

pilosity absent from the head and body surfaces and from the appendages, with the exception of several long standing hairs on the pronotum and other shorter hairs scattered on the gaster somites.

DESCRIPTION. Holotype, ♀: HL 0.57; HW 0.49; SL 0.45; PW 0.34; CI 86; SI 92. Head slightly longer than wide, with subparallel sides and broadly rounded occipital corners. Occipital margin nearly straight. Eyes very small, faintly pigmented, each with 3 ommatidia. Antennae 12-segmented. First segment of the funiculus twice longer than broad, segment 2 bell-shaped, segments 3-10 transverse to subquadrate, apical segment as long as the three preceding ones considered together. Scape subcylindrical, slightly broadened at about its distal third; with the head in full-face view the scape exceeds the occipital margin of a length which is less than its greater diameter. Frontal triangle slightly impressed; frontal lobes very short. Clypeus strongly convex, with a medial blunt carina. Anterior clypeal margin broadly rounded (in full face view it appears angulate due to the projecting middle carinate portion of the clypeus). Mandibles triangular, apical margin with 6 teeth. Apical tooth spiniform, much larger than the preapical which is equal in size to the median and the basal. Palp formula 6,4. Maxillary palp segments IV-VI very short, segment IV longer than segments V and VI considered together, segment V longer than VI.



Figs 5 - 11. *Lasius (Cautolasius) myrmidon* n. sp.. SEM pictures of paratypes ♀♀ : 5 - head in full frontal view (paratype from Platanistos); 6 - lateral view of head and alitrunk (paratype from Stira); 7 - dorsal view (paratype from Stira); 8 - apical margin of mandibles (paratype from Zarakes); 9 - eye (paratype from Stira); 10 - id. (paratype from Platanistos); 11 - id. (paratype from Zarakes).

Alitrunk short; upper surface of the promesonotum flattened, straight in lateral view, promesonotal suture not impressed; convex posterior part of the mesonotum dropping sharply toward the metanotum. Propodeal dorsum very short, a projecting dome in profile; propodeal declivity longitudinally, shallowly concave.

Petiolar scale small, subrectangular in frontal view, with slightly convex sides and shallowly emarginate upper margin.

Body surface and appendages covered with a very fine, adpressed pubescence which is denser on head and gaster. Such pubescence is absent from most of the lateral surfaces of the alitrunk and from the propodeal declivity, which are smooth and shining. Head, excluding clypeus and mandibles, and scapes devoid of standing hairs. Pronotal dorsum with a dozen long erect hairs. Standing pilosity absent from the rest of the alitrunk with the exception of a few hairs on the propleurae and around the metapleural gland opening. Legs simply pubescent. Some erect hairs projecting from both sides of the petiolar scale and scattered on the gaster.

Overall colour very pale yellow; mandibles darker, apical margin dark brown.

PARATYPES. ♀♀. Measurements and indices (mean value and SD between brackets)(n=50): HL 0.53-0.65 (0.57 ± 0.02); HW 0.45-0.57 (0.5 ± 0.02); SL 0.42-0.51 (0.46 ± 0.02); PW 0.31-0.4 (0.34 ± 0.01); CI 82-90 (86 ± 1.47); SI 88-96 (92 ± 1.81).

As holotype, differing only in eye size and dentition. Eyes extremely reduced to absent, ON ranging from 0 to 9 (mean number 3.96 ± 1.47 , n=100)(figs. 9 - 11). Eye pigmentation variable, from faint, though still evident, to almost absent. Mandibles with 6-8 teeth, teeth count more often asymmetrical in both mandibles of an individual (fig. 8). In a few instances, one or two of the teeth between the median and the last basal are very small to vestigial.

Pubescence and chaetotaxy are very constant; only one specimen has two standing hairs on the occipital margin in addition to those on the pronotum. This individual from Zarakes (see below), has also the highest ON (7-9); however, it is not particularly large (HW 0.51).

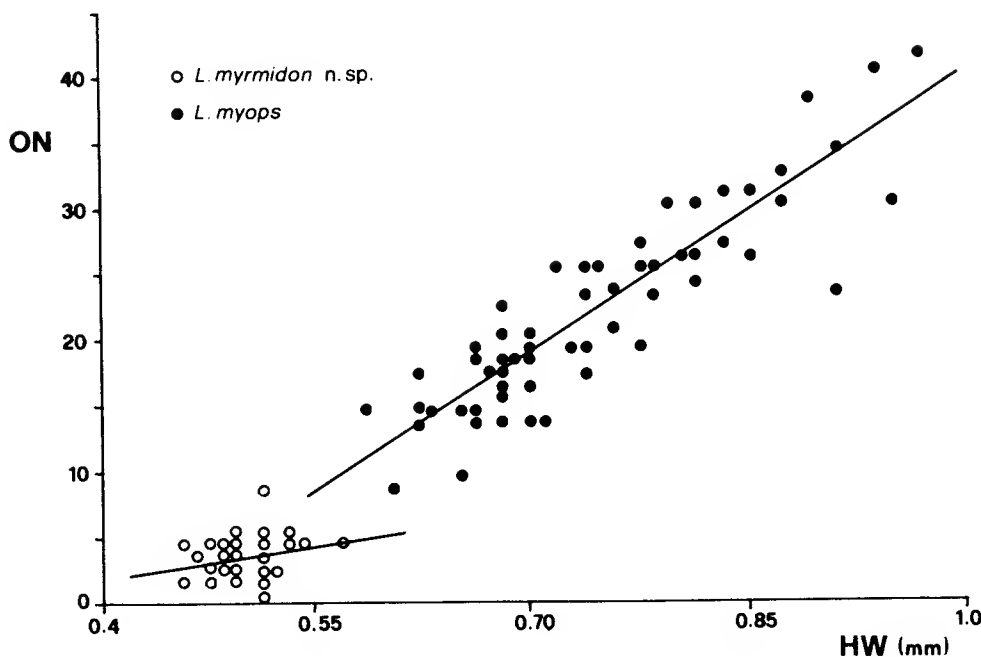
TYPE SERIES. Holotype, ♀: Greece, Southern Evia, surroundings of Stira, 29.III.1983, S. Zoia leg. Paratypes: 23 ♀♀, same data as the holotype (sample C); 30 ♀♀, Greece, Southern Evia, surroundings of Zarakes, 1.IV.1983, S. Zoia leg. (sample A); 7 ♀♀, Greece, Southern Evia, along the road from Platanistos to Komiton, 30.III.1983, S. Zoia leg. (sample B). Probably each one of these samples represent a nest series.

The holotype and 30 paratypes are preserved in the collections of the Museum of Zoology of the University "La Sapienza" of Rome (Italy) (MZUR), 5 paratypes in the Staatliches Museum für Naturkunde Görlitz (Görlitz, Germany), the remaining paratypes in the author collection.

DERIVATIO NOMINIS. The new species is named after the Myrmidons, ants miraculously changed into humans, the mythical inhabitants of the greek island of Egina.

OBSERVATIONS. Both at the sites of Stira and Zarakes *Lasius myrmidon* n. sp. was collected by sifting humid leaf-litter samples, drawn from bushes of *Cistus* sp. and *Erica* sp. in a thin mediterranean scrub on calcareous soil (S. Zoia, pers. comm.). From both sites, together with the new species, specimens of *Stenamma debile* (Foerster, 1850), *Myrmecina graminicola* (Latreille, 1802) and *Prenolepis nitens* (Mayr, 1853) were collected (M. Mei, pers. obs.). In the sample from Stira, *Leptothorax solerii* Menozzi, 1936 and *Leptothorax* sp. were also present.

At the site of Platanistos, a little valley about 2 km south of the village besides the road to Komiton, the ants were collected again by sifting humid leaf-litter sample on cal-



Figs 12. - Number of ommatidia (ON) plotted against head width (HW) in *L. myrmidon* n. sp. (n=50) and *Lasius myops* Forel (n= 62).

careous soil. The sample was drawn from a grove of holm oak trees (*Quercus ilex*) surrounded by mediterranean scrub (Zoia, pers. comm.). In this site, specimens of *S. debile*, *M. graminicola*, *Solenopsis* sp. and *P. nitens* were also collected (M. Mei, pers. obs).

DISCUSSION

For comparison purposes 62 *L. myops* workers from the following European sites have been examined and measured: E Slovakia, Drienovec (n=8); Switzerland, Canton Ticino, Lugano (n=6); France, Pyrenées Orientales, Banyuls (n=10); Italy, Latium, Lucretili Mts., Percile (n=15); Italy, Latium, Sermoneta, Mt. Carbolino (n=10); Italy, Sicily, Mt. Etna, Mareneve (n=5); Italy, Sicily, Eolie Islands, Vulcano (n=8). Further *L. myops* samples from additional Italian sites, as well as three *L. flavus* nest series from France, N Italy and Czech Republic, have been also examined. This material is preserved in the author's collection.

Lasius myops is the *Cautolasius* species morphologically most similar and probably the most closely related to *L. myrmidon* n. sp. It has long been considered a form or a synonym of *L. flavus*, and only very recently has its full specific status been demonstrated (Seifert, 1983; Suñer et al., 1991). The workers can be distinguished from those of *L. flavus* by a different allometric relation among ON and body size, *L. flavus* workers having on average, for a given head width, a number of ommatidia double that of *L. myops* (Seifert, 1983).

From both species, *L. myrmidon* n. sp. is easily distinguished by the unique combination of characters indicated in the diagnosis and in the description: in particular the peculiar chaetotaxy, the very low ON, the shape of the clypeus, and the very small body size are very distinctive. The smallest workers of *L. myops* examined, always have several erect hairs on the occipital surface and on the propodeum and the shape of the clypeus usual for the species. The head is relatively narrower in *L. myrmidon* than in *L. myops* (mean CI value 86 ± 1.47 compared to 94 ± 2.5) and the scape is relatively longer (mean SI value 92 ± 1.81 compared to 78 ± 2.93). In addition, the new species appears to be much less polymorphic, but its pattern of variation should be investigated and verified when more abundant material becomes available.

The known ON range in *L. myops* workers is 6-42, the known HW range being 0.54-1.00 mm (Seifert, 1983; Suñer et al., 1991). In the examined *L. myops* material the measurements are as follows: HL 0.61-0.99 (0.79 ± 0.08); HW 0.59-0.97 (0.74 ± 0.09); SL 0.43-0.76 (0.58 ± 0.07); PW 0.38-0.66 (0.5 ± 0.06); ON 9-42 (22.4 ± 7.37). Though the measurements of a few of the smallest *L. myops* fall into the range of variability of *L. myrmidon*, the regression of ON plotted against HW clearly shows that the two species are well separate (fig. 12).

ACKNOWLEDGEMENTS

I am greatly indebted to Bernhard Seifert (Görlitz, Germany) for his useful suggestions and help with the literature, to Fabrizio Rigato (Milano) who thoroughly reviewed two early versions of this paper and to an anonymous referee that also improved the english text. Many thanks also to Bruno Poldi (Mantova) and Petr Werner (Praha) for their usual kindness and their generous gift of specimens. Finally, I would like to thank Roberto Argano, to whom I owe the realization of the SEM pictures, and to Augusto Vigna Taglianti, Director of the MZUR, for allowing me to study the material under his care.

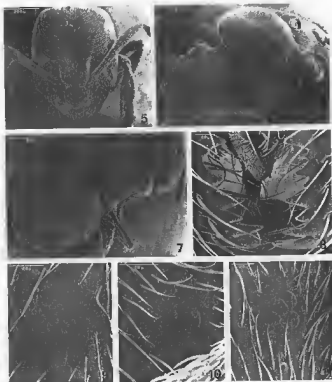
REFERENCES

- AGOSTI, D. & COLLINGWOOD, C. A., 1987 - A provisional list of the Balkan ants (Hym., Formicidae) with a key to the worker caste. II. Key to the worker caste, including the European species without the Iberian. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, 60: 261-293.
- SEIFERT, B., 1983 - The taxonomical and ecological status of *Lasius myops* Forel (Hymenoptera, Formicidae) and first description of its males. *Abhandlungen und Berichten der Naturkundemuseum Görlitz*, 57: 1-16.
- SUÑER, D., GOMEZ C. & ESPADALER X., 1991 - Poblaciones meridionales de *Lasius flavus* (Fabr.) y *Lasius myops* Forel: estudio biométrico (Hymenoptera, Formicidae). *Orsis*, 6: 101-108.
- WILSON, E. O., 1955 - A monographic revision of the ant genus *Lasius*. *Bulletin of the Museum of Comparative Zoology of Harvard*, 113: 1-205.

Author's address:

M. Mei, Dip. Biologia Animale e dell'Uomo, Istituto di Zoologia, Viale dell'Università 32, I-00185 Roma, Italy.

31. Aug. 98



Figs 5 - 11 *Lasius (Caulolasius) myrmidon* n. sp., SEM pictures of paratypes ♀♀: 5 - head in full frontal view (paratype from Platanistos); 6 - lateral view of head and alitrunk (paratype from Sura); 7 - dorsal view (paratype from Sura); 8 - apical margin of mandibles (paratype from Zarakos); 9 - eye (paratype from Sura); 10 - id (paratype from Platanistos); 11 - id (paratype from Zarakos).

Alitrunk short; upper surface of the promesonotum flattened, straight in lateral view, promesonotal suture not impressed, convex posterior part of the mesonotum dropping sharply toward the metanotum. Propodeal dorsum very short, a projecting dome in profile, propodeal declivity longitudinally, shallowly concave.